

Amendments to the Claims

This listing of claims will replace all prior versions, and listings, of claims in the application:

Claim 1 (currently amended): ~~An catheter system,~~ A catheter system comprising:
a catheter body having an exterior surface and including
an ultrasound transducer having an external side between a first end and a second end,
a first medium adjacent to the first end of the ultrasound transducer,
and
a second medium adjacent to the external side of the ultrasound transducer, the second medium being harder than the first medium.

Claim 2 (original): The system of claim 1, wherein the first medium is more flexible than the second medium.

Claim 3 (original): The system of claim 1 wherein a transducer sheath is positioned over the ultrasound transducer and the second medium occupies a volume between the transducer sheath and the external surface of the catheter body.

Claim 4 (original): The catheter of claim 1 wherein an assembly sheath is positioned over the ultrasound transducer and the second medium occupies a volume between the ultrasound transducer and the assembly sheath.

Claims 5–8 (cancelled).

Claim 9 (original): The system of claim 1, wherein a catheter sheath defines at least a portion of the external surface of the catheter body and the second medium occupies a volume between the catheter sheath and the ultrasound transducer.

Claim 10 (original): The system of claim 1, wherein:

the first medium is positioned between the second medium and the external surface of the catheter body.

Claim 11 (original): The system of claim 1, wherein the catheter body includes a second ultrasound transducer having a side between a first end and a second end.

Claim 12 (cancelled).

Claim 13 (currently amended): The system of ~~claim 12~~, claim 1, wherein the second medium is at least 3 times harder than the first medium.

Claim 14 (currently amended): The system of ~~claim 12~~, claim 1, wherein the second medium is about 4 to 5 times harder than the first medium.

Claim 15 (original): The system of claim 1, wherein the first medium has a hardness of at least about 10 Shore D.

Claims 16–20 (cancelled).

Claim 21 (original): The system of claim 1, wherein the catheter body includes a second ultrasound transducer having a side between a first end and a second end.

Claim 22 (original): The system of claim 21, wherein the first medium occupies a volume between the ultrasound transducer and the second ultrasound transducer.

Claim 23 (original): The system of claim 22, wherein the second medium is positioned between the side of the second ultrasound transducer and the external surface of the catheter body.

Claim 24 (original): The system of claim 1, wherein the ultrasound transducer is positioned over an elongated body.

Claim 25 (original): The system of claim 24, wherein the catheter body includes a second elongated body coupled with the elongated body and the first medium occupies a volume between the ultrasound transducer and the second elongated body.

Claim 26 (original): The system of claim 24, wherein the catheter body includes a terminal body coupled with the elongated body and the first medium occupies a volume between the ultrasound transducer and the terminal body.

Claim 27 (currently amended): The system of claim 1, wherein a lumen sized to receive a guidewire extends longitudinally through the catheter body.

Claim 28 (original): A method of fabricating a catheter body, comprising:
 providing an ultrasound transducer having a side between a first end and a second end;
 positioning the ultrasound transducer over an elongated body having an external surface;
 forming a first medium adjacent the first end of the ultrasound transducer;
 and
 forming a second medium adjacent to the side of the ultrasound transducer, the second medium being more transmissive of ultrasound energy than the first medium.

Claim 29 (original): The method of claim 28, wherein the first medium is more flexible than the second medium.

Claim 30 (original): The method of claim 28, wherein delivering the second medium includes

positioning an assembly sheath over the ultrasound transducer, and
delivering the second medium into a volume between the ultrasound transducer and the assembly sheath.

Claim 31 (original): The method of claim 30, wherein delivering the first medium includes

positioning a catheter sheath over the assembly sheath and delivering the first medium into a volume between the assembly sheath and the catheter sheath.

Claim 32 (original): The method of claim 28, wherein delivering the second medium includes

positioning a transducer sheath over the ultrasound transducer,
positioning an assembly sheath over the transducer sheath, and
delivering the second medium into a volume between the transducer sheath and the external surface of the catheter body.

Claim 33 (original): The method of claim 28, wherein delivering the second medium includes

positioning a catheter sheath over the ultrasound transducer, and
delivering the second medium into a volume between the ultrasound transducer and the catheter sheath.

Claim 34 (original): The method of claim 28, wherein delivering the first medium includes

delivering the first medium into a volume between the external surface of the elongated body and the catheter sheath.

Claim 35 (original): The method of claim 28, wherein the second medium is harder than the first medium.

Claim 36 (original): The method of claim 28, wherein the second medium is at least 3 times harder than the first medium.

Claim 37 (original): The method of claim 28, wherein the second medium is about 3 to 5 times harder than the first medium.

Claim 38 (original): The method of claim 28, wherein the first medium has a hardness of at least about 10 Shore D.

Claim 39 (original): The method of claim 28, wherein the first medium has a hardness of about 20 to 40 Shore D.

Claim 40 (original): The method of claim 28, wherein the second medium has a hardness of at least 65 shore D.

Claim 41 (original): The method of claim 28, wherein the second medium has a hardness from about 65 to about 120 Shore D.

Claim 42 (original): The method of claim 28, wherein the first medium has a hardness of at least 10 and the second medium has a hardness of at least 65 Shore D.

Claim 43 (original): The method of claim 28, wherein the first medium has a hardness from about 20 to about 40 Shore D and the second medium has a hardness from about 80 to about 100 Shore D.

Claim 44 (original): The method of claim 28, further comprising:
positioning a second ultrasound transducer over the elongated body, the
second ultrasound transducer having a side between a first end and a second
end.

Claim 45 (original): The method of claim 44 wherein forming the first medium
includes delivering the first medium into a volume between the ultrasound transducer
and the second ultrasound transducer.

Claim 46 (original): The method of claim 39, further comprising:
forming the second medium adjacent to the side of the second ultrasound
transducer.

Claim 47 (original): The method of claim 28, further comprising:
coupling the elongated body with a second elongated body.

Claim 48 (currently amended): The method of claim 47, wherein coupling the
elongated body with a second elongated body includes aligning a lumen within the
elongated body with a lumen within the second ~~elongate~~elongated body.

Claim 49 (original): The method of claim 47, wherein forming the first medium
includes
delivering the first medium into a volume between the ultrasound
transducer and the second elongated body.

Claim 50 (original): The method of claim 28, further comprising:
coupling the elongated body with a terminal body.

Claim 51 (original): The method of claim 50, wherein forming the first medium includes delivering the first medium into a volume between the ultrasound transducer and the terminal body.

Claim 52 (original): The method of claim 50, wherein coupling the elongated body with a terminal body includes aligning a lumen within the elongated body with a lumen within the terminal body.

Claim 53 (new): A catheter system comprising:

- a catheter body having an exterior surface and including
- an ultrasound transducer having an external side between a first end and a second end,
- a first medium adjacent to the first end of the ultrasound transducer and having a hardness of at least about 10 Shore D, and
- a second medium adjacent to the external side of the ultrasound transducer, the second medium being harder than the first medium.